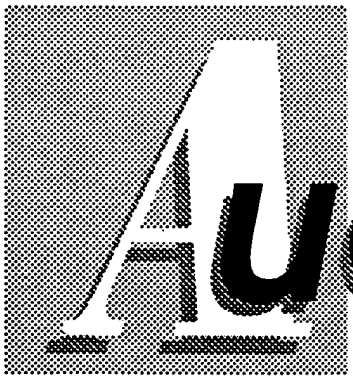

OFFICE OF THE INSPECTOR GENERAL

DEFENSE FINANCE AND ACCOUNTING SERVICE ACQUISITION PROGRAM FOR THE ELECTRONIC DOCUMENT MANAGEMENT PROGRAM

Report No. 98-057 January 27, 1998

Department of Defense

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Acronyms

DFAS	Defense Finance and Accounting Service
EDM	Electronic Document Management
IPT	Integrated Product Team
MAISRC	Major Automated Information System Review Council

INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
400 ARMY NAVY DRIVE
ARLINGTON, VIRGINIA 22202-2884

January 27, 1998

MEMORANDUM FOR UNDER SECRETARY OF DEFENSE (COMPTROLLER)
DIRECTOR, DEFENSE FINANCE AND ACCOUNTING SERVICE

SUBJECT: Audit Report on the Defense Finance and Accounting Service Acquisition Program for the Electronic Document Management Program (Report No. 98-057)

We are providing this audit report for information and use. The Director, Defense Finance and Accounting Service, requested that we review the implementation of the Electronic Document Management Program through the integrated product team process. This report is the first in a series of reports to be issued on the Defense Finance and Accounting Service's acquisition strategy for the Electronic Document Management Program.

Because this report contains no recommendations, written comments were not required. However, we received verbal comments from Defense Finance and Accounting Service personnel updating the status of Increment 1, Vendor Pay, life-cycle documentation and a copy of the December 16, 1997, memorandum from the Major Automated Information System Review Council granting the Program Milestone III approval (Appendix F). We have incorporated this information into the final report.

We appreciate the courtesies extended to the audit staff. Questions on the audit should be directed to Ms. Kim Caprio, Audit Program Director, at (703) 604-9139 (DSN 664-9139) or Mr. Eric L. Lewis, Acting Audit Project Manager, at (703) 604-9144 (DSN 664-9144). See Appendix G for the report distribution. The audit team members are listed inside the back cover.

David K. Steensma

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Deputy Assistant Inspector General
for Auditing

Office of the Inspector General, DoD

Report No. 98-057 **January 27, 1998**
(Project No. 7FG-0029)

Defense Finance and Accounting Service Acquisition Program for the Electronic Document Management Program

Executive Summary

Introduction. The Defense Finance and Accounting Service (DFAS) Electronic Document Management Program (the Program) will standardize document distribution, tracking, and storage. The Program is expected to improve processing time, reporting accuracy, and customer service, resulting in reduced personnel costs. On January 5, 1996, the Deputy Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) designated the Program as a major automated information system subject to the review of the Major Automated Information System Review Council. The DFAS Electronic Document Management Program Office identified three functional areas and is developing them on an incremental basis:

- o Increment 1, Vendor Pay, which pays commercial invoices;
- o Increment 2, Contract Pay, which pays large contracts; and
- o Increment 3, Garnishment, which collects court ordered withholdings.

This report provides the results of our review of the Increment 1, Vendor Pay, life-cycle documentation. The Vendor Pay increment will standardize and automate the document workflow for payments of commercial invoices at five initial DFAS centers or operating locations. In fiscal year 1996, under the current system, DoD paid approximately $290 million in personnel costs to process 13.7 million invoices. Increment 1, if implemented at the 17 locations proposed, will have an estimated life-cycle cost of $404 million for fiscal years 1995 through 2009. The estimated life-cycle costs for the first phase of five locations is $100 million for fiscal years 1995 through 2004. The DFAS expects that reductions in personnel costs made possible by the Program will yield a return on investment but has not yet developed an estimate of the amount.

This audit report is the first in a series of reports on the DoD acquisition strategy for the DFAS Electronic Document Management Program and provides the results of our review of the Increment 1, Vendor Pay, life-cycle documentation. The Director, DFAS, requested that we review the implementation of the Program through the integrated product team process and provide input during the acquisition process.

Audit Objectives. The overall audit objective was to assess the DFAS development and implementation of the Program. Specifically, we reviewed the acquisition documentation for Increment 1, Vendor Pay. We also reviewed management controls related to the objective.

Audit Results. The integrated product teams identified cost, funding, and testing concerns that needed to be resolved before a deployment decision could be recommended. The Program Office provided a cost reconciliation document, funding information, and a schedule for testing to minimize the concerns of the integrated product teams. DFAS developed the required life-cycle documentation and subsequently received a Milestone III deployment decision, for Increment 1, Vendor Pay, of the Program on December 16, 1997. See Part I of this report for further details. Management controls were adequate in that no material management control weakness was identified. See Appendix A for a discussion of the management control program.

During the course of the audit we suggested that management:

o reconcile the benefits of other DoD vendor pay initiatives with the benefits expected from the Electronic Document management solution;

o determine which sites will be fielded, how much workload will be automated, and update the cost and test plans based on those determinations;

o provide cost and performance metrics approved by the Program Analysis and Evaluation personnel, limit fielding to a number of sites necessary to capture feedback data, conduct an in-process review subsequent to the milestone decision, and obtain adequate funding before fielding to additional sites;

o establish a baseline for each site prior to implementation and adjust the total Program baseline accordingly;

o establish criteria to determine when a baseline is breached;

o request a review be made by Operational Test and Evaluation personnel prior to the implementation of new sites or changes in size or workflow at existing sites; and

o request Test Systems Engineering and Evaluation personnel review stress testing to determine the maximum throughput and the level of growth the System can handle.

Because management took responsive action to suggestions made during the review of Milestone III documentation, this report contains no recommendations. However, the Program Office should continue to ensure that the agreed-upon actions are completed within the timeframes established by the Major Automated Information System Review Council and that all IPT members are informed of the status of ongoing actions.

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Part I - Audit Results

Introduction

This audit report is the first in a series of reports on the DoD acquisition strategy for the Defense Finance and Accounting Service (DFAS) Program and provides the results of our review of the Increment 1, Vendor Pay. We previously issued two reports concerning other Electronic Document Management (EDM) Program issues. (See Appendix B for details of those reports.)

Audit Background

Electronic Document Management Program. The EDM Program (the Program) evolved from the DFAS Document Imaging Program. The Imaging Program began as a management improvement initiative in May 1991 that included business process improvement efforts, workflow applications, and electronic document management systems. The Program initiative reviewed during this audit will reduce the paper flow and automate the payment process, potentially reducing cycle time by 20 percent for commercial invoices.

On October 11, 1994, DFAS designated the Imaging Program as an official acquisition program. When the DFAS Electronic Document Management Program Office (the Program Office) updated the mission needs statement in February 1997, several of the same functional areas were still being considered for the EDM solution. The Program Office identified three functional areas or "increments," in which to begin implementing the EDM solution: Vendor Pay, Contract Pay, and Garnishment. DFAS treats each functional area as a separate increment. Each increment has its own life-cycle documentation such as the operational requirements document, test and evaluation master plan, cost analysis requirements description, and life-cycle cost estimate. Increments must identify benefits and be cost effective for a milestone approval. (A milestone is the decision point that separates the phases of an acquisition program. For definitions of the individual acquisition documents and milestones, see Appendix C.)

Increment 1. Increment 1, Vendor Pay, provides the prototype solution to be the basis for the remaining increments. For example, Increment 2, Contract Pay, will expand on the core vendor pay system by adding workflows, such as contract close-out, that are unique to large contracts associated with the Mechanization of Contract Administration Services system. The vendor pay prototype was implemented at the Omaha, Nebraska, operating location and is currently operational. Increment 1 was to be implemented at 17 DFAS centers or operating locations to support the vendor pay function. The DFAS vendor pay function processed over 13.7 million invoices in fiscal year 1996. DFAS estimates the life-cycle costs to fully deploy 17 sites would be $404 million for fiscal years 1995 through 2009 in fiscal year 1996 dollars. The estimated life-cycle cost for the first phase of Increment 1, covering five sites, is $100 million for fiscal years 1995 through 2004. Full operational capability for the first five sites is expected in October 1999.

Review Process. The acquisition of DoD information systems, regardless of size, undergo a review process. A review is held at each milestone to gain approval to enter the next phase of the life cycle. To obtain a milestone decision, the program office develops the life-cycle management documentation.

When the Program began, the oversight body was DFAS's Information Management Executive Board. In October 1994, the DFAS Information Management Executive Board granted the Imaging Program Milestone 0 and I decisions and allowed the Program to proceed with development. A Milestone 0 decision gives approval to conduct concept studies, while a Milestone I decision gives approval to begin a new acquisition program. In support of the milestone decisions, the Program Office had prepared a mission needs statement, an analysis of alternatives, a requirements analysis, an acquisition plan, and a program management plan.

On January 5, 1996, the Deputy Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) designated the Program as a major automated information system subject to the review of the Major Automated Information System Review Council (MAISRC). Consequently, the Program must be managed under the criteria of DoD 5000.2-R, "Mandatory Procedure for Major Defense Acquisition Program (MDAPs) and Major Automated Information Systems (MAIS) Acquisition Program," March 15, 1996. The Regulation requires program offices to develop life-cycle documentation to justify and document their programs. DFAS's Information Management Executive Board had already granted the Program a Milestone 0 and I decision, so the MAISRC honored those decisions and identified the next milestone for Increment 1 to be a combination Milestones II and III.

Because this was the first formal MAISRC examination of the Program, some of the documents generally required for earlier milestones were updated and reapproved. The mission needs statement is required for the Milestone 0 decision; however, the Program Office revised the original mission needs statement and obtained the Under Secretary of Defense (Comptroller) approval in February 1997. The mission needs statement is needed for a Milestone 0 decision because it documents deficiencies in current capabilities and opportunities to provide new capabilities expressed in broad operational terms.

Audit Objectives

The overall audit objective was to assess DFAS's development and implementation of the Program. Specifically, we reviewed the acquisition documentation for Increment 1, Vendor Pay. We also reviewed management controls related to the objective. See Appendix A for a discussion of the audit scope and methodology and Appendix B for prior coverage related to the audit objective.

Acquisition Documentation Review for Increment 1 of the Program

The Defense Finance and Accounting Service's Electronic Document Management Program Office had requested its first Milestone III Deployment Approval decision from the MAISRC on Increment 1, Vendor Pay, of the Program. The Program Office prepared for the decision by using the integrated product team approach to conduct testing, prepare life-cycle documentation, identify and resolve issues, and to make sound and timely suggestions to facilitate Program decisionmaking. The integrated product teams identified cost, funding, and testing concerns that needed to be resolved before a deployment decision could be recommended. As a result, the Program Office provided a cost reconciliation document, funding information, and a schedule for testing and subsequently received on December 16, 1997, Milestone III approval to deploy Increment 1 to five sites.

Designation as a MAISRC System

The EDM Program was designated as a major automated information system in January 1996 and was seeking a Milestone III, Deployment Approval, decision from the MAISRC. This decision would allow the Program Office to procure additional equipment and deploy the system to the identified locations in accordance with the acquisition decision memorandum. To ensure that deployed systems satisfy user requirements, the Secretary of Defense had directed the use of integrated product teams (IPTs) to facilitate the oversight and review of the life-cycle management documentation.

Life-Cycle Management Documentation. DoD 5000.2-R requires the program office to prepare an acquisition strategy and an acquisition program baseline for a Milestone III decision. The mission needs statement, the analysis of alternatives, the operational requirements document, the test and evaluation master plan, a life-cycle cost estimate, and a cost analysis requirements description are other life-cycle documentation that support the acquisition program baseline and decisionmaking. These documents provide the requirements, affordability, and performance data needed to make acquisition decisions at an acceptable level of risk.

Integrated Product Teams. The IPTs consist of qualified team members from the appropriate functional disciplines who are empowered to make commitments for the organizations or functional areas that they represent. Working with a team leader, IPTs build successful and balanced programs, identify and resolve issues, and make sound and timely recommendations to facilitate decisionmaking.

The Program Office established six IPTs (Cost, Test, Training, Vendor Pay Solution, Contract Pay Solution, and Security) to review life-cycle documentation as it was being developed. This aided in the exchange of

information and understanding of the Program among the decisionmakers. IPT members included MAISRC action officers (representatives of the MAISRC members), who reported their conclusions and concerns to their respective MAISRC members. The Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) action officer ensured that the MAISRC Chairman was aware of IPT member conclusions and concerns.

This audit focused on the Cost and the Test IPTs. The Cost IPT focused on the issues affecting funding, cost, and benefits. These issues are addressed in such life-cycle documentation as the mission needs statement, cost analysis requirements description, life-cycle cost estimate, and acquisition program baseline. The Test IPT focused on issues relating to the operational requirements document and the test and evaluation master plan. These two documents are closely related because the testing plan is based on the requirements established in the operational requirements document. The Test IPT also addressed Year 2000 compliance and security issues. Subsequently, the Security IPT was formed in August 1997.

Deploying Increment 1 of the Program

The Program Office had requested its first Milestone III Deployment Approval decision from the Major Automated Information Systems Review Council on Increment 1, Vendor Pay. The life-cycle documentation supporting the Program was in good order. When shortcomings were identified in the documentation, the IPT was able to resolve most issues. The Program Office stated that documentation alone could never address all the information needed to make a fully informed Milestone III decision. Therefore, the IPT process was utilized to discuss issues and to avoid time-consuming "paperwork" drills. As a result, the IPTs completed efforts on many of the life-cycle documents and has developed an effective process to resolve open issues.

Ongoing Efforts. IPT efforts to resolve Increment 1 life-cycle costs, test and evaluation, and acquisition baseline issues are ongoing.

Life-Cycle Costs. The Program's life-cycle cost estimate and the cost analysis requirements description were prepared as required; however, the IPT informed the Program Office that additional support was needed for some of the cost assumptions. The life-cycle cost estimate should consider all the costs to determine whether the solution is affordable and the cost analysis requirements description provides detailed information supporting the life-cycle cost estimate. The additional support would allow decisionmakers to make fully informed decisions about the Program's cost assumptions. Specifically, the cost documentation was prepared based on the assumption that the EDM solution would be implemented at 17 processing locations and did not take into consideration the effects of other ongoing initiatives on DoD vendor payment processing, such as DFAS consolidation efforts and the use of credit cards.

Processing Locations. DFAS is currently undergoing a review of its entire infrastructure, which includes analyzing where vendor pay is processed. As a result, fewer than 17 sites may be needed to support vendor

pay. Because these studies are not complete, the Program Office has initially requested approval to deploy the Program to only five sites. Additional sites will be evaluated on a case-by-case basis.

Credit Cards. Under the Federal Acquisition Streamlining Act of 1994, DoD bills under $2,500 can be paid by credit card without documentation. This initiative accounts for up to 12 percent of all invoices and could account for more if the initiative is expanded. To assure that the EDM is not over-fielded, the Program Office stated that it would not field beyond the five sites unless analyses show that further savings were possible.

Test and Evaluation. The test and evaluation master plan is a high-level blueprint for testing the selected solution to determine whether it will satisfy mission needs. The Program's test and evaluation master plan was prepared and approved as required; however, the IPT reported that stress testing (to determine the effects of significant workload changes), system security testing, and Year 2000 testing remained to be accomplished.

Stress testing is usually accomplished as part of developmental testing to determine the amount of processing the system can handle before failure. The stress test information is essential because it allows the developer to determine whether the proposed system configuration will cost-effectively meet the current and expected mission need. However, the Test IPT was not formed until after the Program had undergone unit acceptance testing. The Test IPT did not require the Program Office to change its development schedule so that a stress test could be run, rather the IPT members assessed all available test information to determine whether a formal stress test was necessary. After the assessment, the IPT found that a stress test would provide essential information on the systems processing and growth capabilities. The Program Office agreed and scheduled the testing for February 1998.

Acquisition Program Baseline. Program Analysis and Evaluation personnel stated that the acquisition program baseline is the most important life-cycle document during a Milestone III decision process. Specifically, the acquisition program baseline should present the most likely cost, schedule, and performance characteristics of the selected solution and serve as the basis for the acquisition decision memorandum. The Program Office prepares the acquisition program baseline and submits it to the MAISRC to show how the program office proposes to manage the acquisition program. The MAISRC will issue an acquisition decision memorandum that either accepts or modifies the acquisition program baseline. The acquisition decision memorandum becomes the contract between the MAISRC and the program office. If a program's cost, schedule, and performance adversely deviates from the acquisition decision memorandum the program manager must provide an explanation for the discrepancy and develop a plan to correct the discrepancy. The EDM Program's acquisition program baseline needed more specific information in order to establish supportable baselines. In particular, the Program's life-cycle cost documentation had to be reconciled with the component cost analysis/sufficiency review to establish a baseline. The acquisition program baseline had a life-cycle cost estimate of $104 million for fiscal years 1995 through 2004 for five sites; that figure changed to $100 million after the reconciliation. The MAISRC provided the following direction to accomplish the reconciliation of the cost estimate.

Cost Estimate Reconciliation and Site Funding. The component cost analysis/sufficiency review and the Program Office estimate were to be reconciled and the Program Office was to ensure that the first five sites were fully funded. The MAISRC gave the Program Office 60 days from August 1, 1997, to resolve these issues. If these issues were not resolved within 60 days, the Program Office had to brief the Overarching IPT before proceeding with further predeployment activities. The DFAS Resource Management Deputate completed the cost reconciliation on September 15, 1997, and provided the MAISRC with the appropriate funding documentation.

Acquisition Decision Memorandum Directions. While the cost documentation issues were being resolved, the MAISRC established the steps necessary to establish the Program's baselines. The MAISRC established these steps based on the work of the IPT. The Program Office will carry out the proposed acquisition decision memorandum directions by performing additional test and evaluation and security and performance measurement. Additionally, the Program Office will continue the development of Increment 2 (Contract Pay). Increment 2 will provide Program services for the Mechanization of Contract Administration Services system and will have a separate Milestone III decision. The final acquisition decision memorandum was signed on December 16, 1997, which allows the Program Office to field the Increment 1 of the Program at up to five sites. (See Appendix F for a copy of the memorandum)

Completed Efforts. The IPTs have completed efforts and resolved Increment 1 issues regarding mission needs, analysis of alternatives, and operational requirements.

Mission Needs Statement. The mission needs statement demonstrated that a business area deficiency existed that cannot be satisfied with just a change in business practices. The Program's mission needs statement was prepared and approved as required. However, the IPT members (including the Program Office) recognized that the document did not provide decisionmakers with sufficient information on other initiatives because they were outside Program Office control. These initiatives could ultimately reduce the volume of vendor pay transactions as well as the number of documents to be managed. Examples of these other initiatives were DFAS consolidations and the use of credit cards. Through the IPT process, the Program Office assessed the impact of the other initiatives and decided to limit fielding to no more than the five sites. Additional sites must be analyzed and determined to be cost-effective before they can be fielded. This process will ensure that other initiatives affecting mission need will be adequately considered.

Analysis of Alternatives. The analysis of alternatives provides the decisionmaker the opportunity to evaluate available alternatives to satisfy mission needs. The Program Office's analysis of alternatives documentation in conjunction with IPT work supports Program development. A 1993 Analysis of Alternatives and a 1996 Functional Economic Analysis were prepared. Functional economic analyses were used to assess cost-effectiveness before the adoption of DoD 5000.2-R. Neither document completely stated the advantages and disadvantages of the Program; however, the documents had been initiated before the DoD 5000.2-R requirements were adopted. Therefore, the IPTs

assessed the impact of other initiatives and did not discover any other alternatives that had not been addressed during the mission needs statement review.

The 1993 Analysis of Alternatives was limited to the availability of technology at other organizations. This analysis concluded that no alternatives existed other than to initiate a new contract to develop the solution. The 1996 Functional Economic Analysis was based on the Omaha, Nebraska, operating location. The benefits identified by this analysis were used as the basis to determine the overall benefits of the Program, which were documented in the Program Office's life-cycle cost estimate. Although the two analyses alone do not totally satisfy the DoD 5000.2-R requirements, the Program Office reduced the risk of over-fielding the Program by limiting fielding to five initial sites.

Operational Requirements. The operational requirements documents provides the high-level user requirements of the selected solution for the business area deficiency. The Program's operational requirements document was prepared and approved as required. However, IPT members reported that the document was based on the DFAS Denver Center work environment rather than the total expected Increment 1, Vendor Pay, environment. Therefore, decisionmakers did not know if the EDM solution would be effective for all EDM sites. At the request of the IPT, the Program Office performed a "Gap" analysis of other sites expected to receive the Program to determine what modifications were necessary. The Program Office used the term "Gap" to describe the difference in requirements from the test site to the proposed fielding sites. After completing the Gap analysis, the Program Office assured decisionmakers that minimal changes were necessary and the operational requirements document would be updated to reflect the needed changes.

Using the Integrated Product Team Process

The Program Office prepared for the Milestone III decision by using the IPT approach to conduct testing, prepare life-cycle documentation, identify and resolve issues, and to make sound and timely suggestions to facilitate Program decisionmaking. The Program is the DFAS's first major automated information system to undergo a MAISRC examination. On July 29, 1997, the Inspector General formally submitted a Program IPT assessment to the Program Office (Appendix D). On August 6, 1997, the Program Office responded that it had reviewed the findings and had already taken steps to incorporate the suggestions into the Program (Appendix E). The IPT assessment was based on meetings, documentation reviews, and test reviews.

Meetings. Cost and Test IPT meetings were held to foster open discussions, raise issues, and resolve problems early in the acquisition process. The teams consisted of Program Office and oversight personnel empowered to act on behalf of their organizations. Meetings could be requested by any member. Reasoned disagreements were quickly resolved at the IPT level. The IPTs used continuous up-the-line communication to higher-level staff to quickly resolve

complex issues, such as the handling of probable DFAS consolidations. A Security IPT was formed in August 1997 to handle systems security issues.

Cost Meetings. The Cost IPT consisted of personnel from the Program Office and from the offices of the Assistant Secretary of Defense for Command, Control, Communications, and Intelligence; Director, Program Analysis and Evaluation, Under Secretary of Defense Comptroller; U.S. Army Cost and Economic Analysis Center, and Inspector General, DoD. The cost meetings focused on the operational requirements document, life-cycle cost estimate, cost analysis requirements description, and the acquisition program baseline issues. The meetings in support of the cost documentation met regularly, sometimes weekly, for almost 2 months to resolve cost issues. These contributions were significant in achieving timely Program implementation. For example, the Program cost documentation was developed for 17 sites. However, with the potential for fewer sites, the Program Office opted for a phased deployment approach, initially deploying to five sites with additional sites to be evaluated on a case-by-case basis. Additional information was needed from the Program Office to identify the likely cost and benefits for the first five sites. This data were used to determine the cost effectiveness of the Program assuming only five sites were implemented. The IPT process saved time because data was shared, eliminating the need to re-compute all costs and benefits.

Test Meetings. The Test IPT consisted of personnel from the Program Office and from the offices of the Assistant Secretary of Defense for Command, Control, Communications, and Intelligence; Director, Operational Test and Evaluation; Director, Test Systems Engineering and Evaluation; Commander, Joint Interoperability Test Command; and Inspector General, DoD. The test meetings focused on the operational requirements document and the test and evaluation master plan. Although meetings in support of testing issues met less frequently, major contributions were still made toward achieving timely Program implementation. For example, although complete developmental stress testing had not been accomplished, the IPT did not request the Program Office to delay its initial operational testing. Rather, having sufficient insight into the Program, the IPT concluded that stress testing could be addressed later, before operational fielding occurs. This allowed the Program Office to maintain its schedule. Consideration was also given to security and the Year 2000 testing.

Documentation Reviews. The IPT performed documentation reviews as it would in its normal oversight capacity. Through the IPT process information was shared that facilitated faster resolution of issues.

Command, Control, Communications, and Intelligence Role. The Office of the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) provided the team leader for the Cost and Test IPTs. The team leader attended documentation briefings and ensured that the issues raised and resolutions proposed were well communicated. The team leader also informed the MAISRC of the Program's status and obtained Program Office feedback.

Program Analysis and Evaluation Role. Through the IPT process, Program Analysis and Evaluation personnel reviewed the life-cycle cost estimate and the cost analysis requirements description. They also reviewed the component cost analysis/sufficiency review performed by the Army Cost and

Economic Analysis Center. They found that the documentation was in order except for some of the assumptions requiring further support and the effect of other initiatives requiring documentation. They also initiated the process to reconcile the difference between the component cost analysis/sufficiency review and the Program Office cost estimate. The reconciliation process was essential to keep the Program viable as Program Office personnel were not experienced in reconciling the cost estimates. Findings from the Program Analysis and Evaluation personnel indicate that the Program will be cost-effective. Because the IPT process was used, the issues were not a surprise as members were updated during the meetings. As a result, solutions were generally discussed at the meetings.

Test and Evaluation Role. Test and evaluation personnel from the Offices of the Director, Operational Test and Evaluation, and the Director, Test Systems Engineering and Evaluation, reviewed the Program's test and evaluation master plan and the operational requirements document. Although, they are only required to approve the test and evaluation master plan, they reviewed the operational requirements document because the test plans are based on user requirements. They discovered that the operational requirements document focused on the Omaha, Nebraska, operating location rather than the total Increment 1 population. They provided this information through the IPT meetings and suggested that an analysis be performed to ensure that unique requirements of other sites are considered. Acting on the information, the Program Office performed the Gap analysis to ensure that all requirements were evaluated. Also, during an IPT meeting, test and evaluation personnel provided information supporting the performance of stress testing.

Inspector General, DoD, Role. The Program Office invited Inspector General, DoD, personnel to participate in the IPT process to help facilitate communications and early solutions to problems. The Inspector General personnel reviewed the life-cycle documentation and the acquisition process and shared information with the IPT members. Through the IPT, the Inspector General provided input during meetings and in writing.

Inspector General personnel served on both IPTs and kept IPT members fully informed. For example, Program Analysis and Evaluation personnel also needed to know the stress test performance of the system to ensure that the most cost-effective configuration is used. Because they were unable to attend the Test IPT meetings, they would not have been aware of the stress test issue.

Test Reviews. IPT members also reviewed the Program's initial operational test and evaluation. The Joint Interoperability Test Command independently conducted the test. Operational Test and Evaluation personnel approved the test after an IPT meeting in which test parameters were questioned. Due to consolidation activities at the test site, the Program Office proposed that some performance requirements be lowered. The Operational Test and Evaluation and Inspector General personnel explained to the IPT members that lowering the requirements could make the test results unreliable. The Program Office concurred and rescheduled the test for a later date when the consolidation activities would not drastically affect the test. The test report from the Joint Interoperability Test Command was favorable and approved by the Operational Test and Evaluation personnel. The only remaining test issues are stress testing, system security testing, and the Year 2000 testing. These solutions were not

available during the initial operational test and evaluation; however, the Program Office has scheduled these items for testing. The security test, the Year 2000 testing, and the stress test are scheduled for February 1998.

Cost, Funding, and Testing

The integrated product teams identified cost, funding, and testing concerns that needed to be resolved before a deployment decision could be recommended. The Program Office provided documentation effectively resolving those issues.

Cost and Funding. The IPT ensured that Program cost was properly assessed to reduce the risk that the Program was not cost-effective. The initial Program was to be deployed to 17 sites. However, the Program Office did not have sufficient funding for all sites. Through the IPT process, the Program Office proposed a phased-deployment approach and requested authority to only deploy the first five sites. The Program Office satisfactorily resolved the funding issues for these five sites.

The Cost IPT took steps to ensure that the component cost analysis/sufficiency review and Program Office cost estimates were reconciled. DFAS personnel worked with the Cost IPT to reconcile these differences and establish a cost baseline for the Program. These DFAS personnel also evaluated the proposed Program benefits to reduce the risk that affordability assumptions were misstated. Once cost and performance issues are resolved, the Program Office can make schedule and fielding decisions.

Testing. The Test IPT has taken steps to ensure that performance issues such as stress, security, and Year 2000 testing will be accomplished. The Program Office recommended conducting the stress testing on the Increment 2 system configuration because it represented the most likely configuration to be fielded (for 200 or more users). The Test IPT members responded that the Program Office recommendation was appropriate. This will aid in configuration determinations if the future consolidations place more workload at the initial five sites.

A Security Test Team has been formed to ensure that adequate security is designed into the system and is tested sufficiently. Further, the IPT members will perform or observe the Year 2000 testing in February 1998 to determine whether the contractor provided software solution is adequate.

Program Suggestions. IPT members consolidated their issues and suggestions so that the Program Office could resolve the issues based on input from all the members, rather than from conflicting suggestions of various oversight organizations. The Program Office accepted these suggestions and worked to make the IPT process successful.

Management Actions Taken

As issues and concerns were presented by the IPT members and the Inspector General, DoD, the MAISRC took action to correct any deficiencies and mitigate the acquisition risk. This was accomplished by giving the Program Office limited fielding authority until the reconciliation of the cost documentation was complete. The MAISRC also identified other issues in the acquisition decision memorandum that the Program Office needed to complete. The acquisition decision memorandum, signed by the MAISRC Chair on December 16, 1997, gave the Program Office full Milestone III approval to field Increment 1 at up to five locations (Appendix F). In addition, before each site activation (except Omaha, Nebraska) an agreed-upon performance baseline will be established. The Program Office will be required to provide status of the tasks identified in the acquisition decision memorandum through quarterly reporting.

Actions by the MAISRC. On July 29, 1997, the Inspector General provided the MAISRC action officer with a preliminary risk assessment of the Program. On August 1, 1997, the MAISRC provided limited authority to field the system and direction to achieve full fielding authority.

Procurement and Fielding Authority. The Program Office has been authorized to procure long-lead items, conduct site surveys, make software modifications, and prepare the facilities. However, fielding authority was limited to the Omaha site until the component cost analysis/sufficiency reviews were performed, Program Office cost estimates were reconciled, and the first five sites were fully funded.

Program Manager Direction. The program manager was directed to immediately follow the proposed acquisition decision memorandum direction in regard to test and evaluation, security, performance measurement, the Defense Information Infrastructure Common Operating Environment, the Joint Technical Architecture, and the Defense Integration Support Tool. The program manager was also authorized to continue developing Increment 2 (Contract Pay) and to begin development of Increment 3 (Payroll Services).

Cost Reconciliation and Funding. The cost reconciliation and funding issues were to be resolved in 60 days from August 1, 1997, or the program manager had to brief the Overarching IPT on Program status before proceeding with further predeployment activities. The Program Office provided the MAISRC the cost reconciliation and funding documentation within the allotted time; however, the Cost IPT required time to review the documentation. Therefore, Milestone III approval was not granted until December 1997.

Milestone III Approval. The issues were resolved and Milestone III approval was granted for up to five sites on December 16, 1997. The Program Office provided the cost reconciliation documentation, funding information, and a schedule for testing that were reviewed by the IPT members. The final acquisition decision memorandum identified outstanding issues still being addressed by the Program Office, in particular performance measures baselines. (See the MAISRC's EDM decision memorandum in Appendix F for further details.)

Conclusion

DFAS developed the required life-cycle documentation and received a Milestone III deployment decision for Increment 1, Vendor Pay, of the Program. The Program Office's use of the IPTs greatly improved decisionmaking abilities of the MAISRC and the Program Office. Issues were identified early and the MAISRC and the Program Office took action or planned to take agreed-upon actions. The actions taken, based on the IPT process, should reduce the acquisition risk to the DoD. This report did not make any recommendations because actions taken by management met the intent of the IPT suggestions. However, the Program Office should continue to ensure that the agreed-upon actions are completed within the timeframes established by the MAISRC and that all IPT members are informed of the status of ongoing actions.

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Part II - Additional Information

Appendix A. Audit Process

Scope and Methodology

Work Performed. The objective of this audit was to assess the Program's development and implementation. Specifically, we reviewed the acquisition process for Increment 1, Vendor Pay. This increment had an estimated cost of $404 million dollars, for fiscal years 1995 through 2005, to automate processing for 13.7 million invoices.

The methodology of the review included analyses, interviews, and observations on the EDM acquisition process. Specifically, we:

- o participated in the IPT meetings;
- o evaluated life-cycle documentation, including the mission needs statement, operational requirements document, life-cycle cost estimate, cost analysis requirements description, acquisition program baseline, and test and evaluation master plan, to determine whether the core management issues were adequately addressed;
- o reviewed test plans;
- o coordinated with and interviewed Program Office personnel; and
- o toured the Increment 1 pilot facilities at Omaha, Nebraska.

Use of Computer-Processed Data. We did not rely on computer processed data to verify the reasonableness of the data provided by DFAS.

Use of Technical Assistance. Operations research analysts from the Quantitative Methods Division, Office of the Inspector General, DoD, provided assistance in the review of EDM cost analysis requirements description and the life-cycle cost estimate.

Audit Type, Date, and Standards. We performed this program audit from February 1997 through December 1997 in accordance with auditing standards issued by the Comptroller General of the United States, as implemented by the Inspector General, DoD. Accordingly, we included tests of management controls considered necessary.

Contacts During the Audit. We visited or contacted individuals and organizations within the DoD; the General Accounting Office, Washington, DC; and Tecolote Research, Inc., Arlington, Virginia. Further details are available on request.

Management Control Program

DoD Directive 5010.38, "Management Control Program," August 26, 1996, requires DoD organizations to implement a comprehensive system of management controls that provides reasonable assurance that programs are operating as intended and to evaluate the adequacy of the controls.

Scope of Review of Management Control Program. We reviewed the adequacy of DFAS controls for managing the acquisition actions and life-cycle documentation preparation for the Program. Specifically, we reviewed the annual statement of assurance prepared by DFAS headquarters and the Program Office's self-evaluation. Because we did not identify a material weakness, we did not assess management's self-evaluation.

Adequacy of Management Controls. DFAS management controls were adequate as they applied to the audit objectives.

Appendix B. Summary of Prior Coverage

Inspector General, DoD, Report No. 98-013, "Second User Acceptance Test of the Electronic Document Management System at the Defense Finance and Accounting Service Operating Location, Omaha, Nebraska," October 24, 1997. This audit evaluated whether system performance and control deficiencies identified during the first user acceptance test were corrected. The auditors found that DFAS had resolved functional difficulties reported during the first user acceptance test. No recommendations were made, and no management comments were received.

Inspector General, DoD, Report No. 97-050, "Evaluation of Controls Over Workflow Applications Selected for Electronic Document Management," December 17, 1996. This audit evaluated whether controls over workflow applications selected for EDM were adequate. The auditors found, through the EDM acceptance tests, that the system's vendor payment processes and workflows could achieve the management control objectives related to completeness, accuracy, and authorization of data as intended. Still, the system failed to input appropriate security controls over log-in attempts, meet system audibility requirements, and protect secure files. No recommendations were made, and no management comments were received.

Appendix C. Glossary

Acquisition Decision Memorandum. Documents the exit criteria for the program. Exit criteria are normally selected to track progress in important technical, schedule, or management risk areas. The exit criteria serve as "gates" that, when successfully passed or exited, demonstrate that the program is on track to achieve its final program goals and should be allowed to continue with additional activities within an acquisition phase or be considered for continuation into the next acquisition phase.

Acquisition Phase. All tasks and activities needed to bring the program to the next major milestone. Phases provide a logical means of progressively translating broadly stated mission needs into well-defined, system-specific requirements and ultimately into operationally effective, suitable, and survivable systems. An example of an acquisition phase is Program Definition and Risk Reduction.

Acquisition Program Baseline. Documents the cost, schedule, and performance objectives and thresholds of a program beginning at program initiation. Contains only the most important cost, schedule, and performance parameters. Defined as those parameters that, if the thresholds are not met, would cause the milestone decision authority to require a reevaluation of alternative concepts or design approaches. The values of the parameters shall represent the program as it is expected to be produced or deployed.

Analysis of Alternatives. For major automated information systems, this document shall be prepared by the principal staff assistant for consideration at Milestone 0. These analyses are intended to aid and document decisionmaking by illuminating the relative advantages and disadvantages of the alternatives being considered. The analysis of alternatives, system requirements, and system evaluation measures of effectiveness shall be clearly linked.

Component Cost Analysis/Sufficiency Review. The sufficiency review assessed the program direction, architecture, schedule, and risk associated with the major cost drivers for completeness, reasonableness, consistency, and documentation. An independent cost estimate of high-risk cost elements will also be conducted.

Cost Analysis Requirements Description. Document prepared by the DoD Component sponsoring the acquisition program that describes the salient features of the acquisition program and of the system to be used as the basis for the life-cycle cost estimates. For major automated information systems programs, the program manager shall prepare the document in coordination with the appropriate IPT members.

Integrated Product Team (IPT). Consists of representatives from the appropriate functional disciplines working together to build successful programs by providing input that enables decisionmakers to make the right decisions at the right time. Participants function in a spirit of teamwork and are empowered and authorized, to the maximum extent possible, to make commitments for the

organizations or functional areas that they represent. IPTs operate under the following broad principles:

- o open discussions with no secrets;
- o qualified, empowered team members;
- o consistent, success-oriented, proactive participation;
- o continuous "up-the-line" communications;
- o reasoned disagreement; and
- o issues raised and resolved early.

Life-Cycle Cost Estimate. Prepared by the program office in support of program initiation (usually Milestone I) and for all subsequent milestone reviews. Should be neither optimistic nor pessimistic but based on a careful assessment of risks and reflecting a realistic appraisal of the level of cost most likely to be realized. For major automated information system programs, the estimate shall include life-cycle benefits in addition to life-cycle costs.

Major Automated Information Systems. A program that is (1) designated by the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) as a major system, or (2) estimated to require program costs in any single year in excess of 30 million in FY 1996 constant dollars, total program costs in excess of 120 million in FY 1996 constant dollars, or total life-cycle costs in excess of 360 million in FY 1996 constant dollars. Major automated information systems do not include highly sensitive, classified programs (as determined by the Secretary of Defense). To determine whether an automated information system is major, the following shall be aggregated and considered a single system: (1) the separate systems that constitute a multi-element program; (2) the separate systems that make up an evolutionary or incrementally developed program; or (3) the separate systems that make up an a multi-component automated information system program.

Major Automated Information Systems Review Council. The Department's senior-level forum for advising the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) on critical decisions concerning major automated information systems programs. The MAISRC is chaired by the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence). Principal members of the MAISRC include representatives from the offices of the Under Secretary of Defense (Acquisition and Technology); Under Secretary of Defense (Comptroller); the Joint Chiefs of Staff; the Director, Operational Test and Evaluation; the Deputy Assistant Secretary of Defense (Command, Control, Communications, and Intelligence); the user representatives; and the cognizant senior information management official(s) or Component Acquisition Executives(s), as appropriate.

Milestone. Decision point that separates the phases of an acquisition program.

Milestone 0. Milestone giving approval to conduct concept studies. For major automated information system, the cognizant principle staff assistant validates the mission need and process integrity in compliance with DoD Directive 8000.1, "Defense Information Management Program," October 27, 1992, and the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) convenes a Milestone 0 MAISRC review. A favorable Milestone 0 decision does not mean that a new acquisition program has been initiated.

Milestone I. Milestone giving approval to begin a new acquisition program. The purpose of the Milestone I decision point is to determine whether the results of Phase 0 warrant establishing a new acquisition program and to approve entry into Phase I, Program Definition and Risk Reduction.

Milestone II. Decision point that determines whether the results of Phase I warrant continuation of the program and whether entry into Engineering and Manufacturing Development (or software engineering and development for a software intensive system) is approved.

Milestone III. Decision point known as, Production or Fielding/Deployment Approval, that authorizes entrance into deployment for an major automated information systems program.

Milestone Decision Authority. The individual designated in accordance with criteria established by the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) to approve entry of an acquisition program into the next phase.

Mission Needs Statement. Documents deficiencies in current capabilities and opportunities to provide new capabilities expressed in broad operational terms. The mission needs statement shall identify and describe the mission deficiency; discuss the results of mission area analysis; describe why nonmateriel changes (such as doctrine and tactics) are not adequate to correct the deficiency; identify potential materiel alternatives; and describe key boundary conditions and operational environments that may impact satisfying the need, such as information warfare.

Objective Value. Value that is desired by the user and which the Program Office is attempting to obtain. It could represent an operationally meaningful, time-critical, and cost-effective increment above the threshold for each program parameter. Program objectives (parameters and values) may be refined based on the results of the preceding program phase(s).

Operational Requirements Document. At each milestone beginning with program initiation (usually Milestone I), contains thresholds and objectives initially expressed as measures of effectiveness or performance and minimum acceptable requirements for the proposed concept or system as documented by the user or user's representative. Thresholds and objectives in the operational requirements document shall consider the results of the analysis of alternatives and the impact of affordability constraints.

Phase 0. The objectives of the Concept Exploration phase are to define and evaluate the feasibility of alternative concepts and provide a basis for assessing the relative merits (for example, advantages and disadvantages, degree of risk)

of these concepts at the next milestone decision point. Analysis of alternatives shall be used as appropriate to facilitate comparisons of alternative concepts. The most promising system concepts shall be defined in terms of initial, broad objectives for cost, schedule, performance, software requirements, opportunities for tradeoffs, overall acquisition strategy, and test and evaluation strategy.

Phase I. The objective of the Program Definition and Risk Reduction phase is to define the program, pursuing one or more concepts, design approaches, and/or parallel technologies, as warranted. Assessments of the advantages and disadvantages of alternative concepts shall be refined. Prototyping, demonstrations, and early operational assessments shall be considered and included as necessary to reduce risk so that technology, manufacturing, and support risks are well in hand before the next decision point. Cost drivers, life-cycle cost estimates, cost-performance trades, interoperability, and acquisition strategy alternatives shall be considered to include evolutionary and incremental software development.

Phase II. The objectives of the Engineering and Manufacturing Development phase are to translate the most promising design approach into a stable, interoperable, producible, supportable, and cost-effective design; validate the manufacturing or production process; and demonstrate system capabilities through testing.

Phase III. The objectives of the Production, Fielding/Deployment, and Operational Support phase are to achieve an operational capability that satisfies mission needs. Deficiencies encountered in Developmental Test and Evaluation and Initial Operational Test and Evaluation shall be resolved and fixes verified. The production requirement of this phase does not apply to major automated information systems acquisition programs or software-intensive systems with no developmental hardware components. During fielding/deployment and throughout operational support, the potential for modifications to the fielded/deployed system continues.

Test and Evaluation Master Plan. Focuses on the overall structure, major elements, and objectives of the test and evaluation program consistent with the acquisition strategy. The plan should include sufficient detail to ensure the timely availability of both existing and planned test resources required to support the test and evaluation program.

Threshold. The minimum acceptable value that, in the user's judgment, is necessary to satisfy a need. If threshold values are not achieved, program performance is seriously degraded, the program may be too costly, or the program may no longer be timely. The spread between objective and threshold values shall be individually set for each program based on the characteristics of the program such as maturity and risk.

U.S. Army Cost and Economic Analysis Center. An independent organization with an agreement with DFAS to perform schedule, cost, economic analysis, and specialized studies in support of DFAS.

Year 2000 Requirement. Addresses corrections in the hardware and software are needed to ensure continuation of operations as year 2000 approaches. Most computer hardware and software use two digits to identify the year instead of

four; for instance, 1996 is often input, stored, sorted, and calculated as "96." Similarly, the year 2000 will be treated as "00," the same designation as the year 1900. This will cause errors in operations involving sorting, comparing, indexing, and computation that could shut down the system, cause applications to operate incorrectly, or worse, slowly corrupt data over time. Such problems could arise without even being noticed at first.

Appendix D. Inspector General, DoD, Review of Electronic Document Management Milestone III Documentation

INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
400 ARMY NAVY DRIVE
ARLINGTON, VIRGINIA 22202

July 29, 1997

MEMORANDUM FOR DEPUTY DIRECTOR, DEFENSE FINANCE AND ACCOUNTING SERVICE, PLANS AND MANAGEMENT DEPUTATE

SUBJECT: Review of the Milestone III Documentation for the Defense Finance and Accounting Service Electronic Document Management Program

Our review of the Electronic Document Management Program started on February 19, 1997. This memorandum reports the initial results of our review of the Milestone III documentation. We used guidance contained in the DoD Regulation 5000.2-R, "Mandatory Procedures for Major Defense Acquisition Programs and Major Automated Information System Acquisition Programs," March 15, 1996, to evaluate the life-cycle management process. The review also considered and evaluated the use of tailoring and the best business practices, as needed.

During our review, we determined that the Program Office had prepared the required documentation. However, that documentation alone did not provide the milestone decision authority with sufficient information to make a fully informed Milestone III decision. We have attached our assessment of the program's core acquisition management issues, the risks involved with implementing the current program, and suggestions that could be used to decrease the risk.

We suggest that these points be addressed to reduce the program's risk and to answer the core acquisition management issues. We plan to include these and any additional issues which may arise in our draft report. If there are any questions, please contact Mr. Dennis L. Conway, Audit Project Manager, at (703) 604-9158 (DConway@DODIG.OSD.MIL)or Mr. Eric Lewis at (703) 604-9144 (ELewis@DODIG.OSD.MIL).

For F. Jay Lane
Acting Director
Finance and Accounting Directorate

Review of the Electronic Document Management Program's Milestone III Documentation

Background for Core Acquisition Management Issues.

The Executive Summary to the DoD 5000 guidance provides specific core management issues that must be formally addressed for every acquisition program. The milestone decision authority will depend on life-cycle management documentation that adequately addresses the core management issues before making program decisions.

We evaluated the following life-cycle documentation to determine if the core management issues were adequately addressed:

1. We evaluated the Mission Needs Statement to determine if there was a validated need for the Program.
2. We evaluated the Operational Requirements Document to determine what specific capabilities were necessary.
3. We evaluated the Life-Cycle Cost Estimate and the Cost Analysis Requirements Description to determine the cost of the Program, if it was affordable, and if it was fully funded.
4. We evaluated the functional economic analysis in lieu of the analysis of alternatives to determine if alternative solutions had been reviewed and the reasons for selecting the solution being pursued.
5. We evaluated the Acquisition Program Baseline to determine if a program baseline had been developed.
6. We reviewed the Test and Evaluation Master Plan to determine if the System had a stable design, if its operational capability had been verified, and if it was operationally effective and suitable.

Mission Needs Statement.

Issue. Part 2.3, Requirements Evolution, states that DoD Components shall document deficiencies in current capabilities and identify opportunities to provide new capabilities in a mission needs statement. In the process of refining requirements, key concepts that should be adhered to include keeping all reasonable options open, facilitating trade-offs throughout the acquisition process, and avoiding early commitments to system-specific solutions.

The Electronic Document Management Program's Mission Needs Statement was prepared and approved as required; however, at that time only the Electronic Document Management solution versus the status quo was considered feasible. Program Office personnel stated that they did not have sufficient data to quantify the effects of other initiatives. Examples of those other

initiatives are the use of credit cards and electronic commerce, which will reduce the need for the Program. Therefore, the Program Manager and the Milestone Decision Authority must assess the need for this solution over time with other DoD initiatives. With several on-going initiatives in the vendor pay arena, the Electronic Document Management Program's payback calculations can not be finalized until this reconciliation is accomplished.

Suggested Action. Reconcile the benefits of other DoD vendor pay initiatives with the benefits expected from the Electronic Document Management solution.

Analysis of Alternatives and Functional Economic Analysis.

Issue. Part 2.4, Analysis of Alternatives, states that an analysis of alternatives should aid decisionmaking by illuminating the relative advantages and disadvantages of the alternatives being considered.

A Functional Economic Analysis for the Electronic Document Management Program was prepared in lieu of an analysis of alternatives. The Electronic Document Management Program's Functional Economic Analysis does not completely state the advantages and disadvantages of the Program; however, the economic analysis was prepared before the DoD 5000 requirements and was not intended to meet those requirements. Further, as noted with the Mission Needs Statement, Program Office personnel stated they did not have sufficient information regarding other DoD initiatives that would have aided in illuminating the advantages and disadvantages of the Program. As a result, the most advantageous solution will not be known until the reconciliation of the Electronic Document Management Program with other programs and initiatives.

Suggested Action. The risk here is the same as that posed by the mission need statement and can be addressed accordingly.

Operational Requirements Document.

Issue. Part 2.3, Requirements Evolution, states that at each milestone, minimum requirements for the proposed concept or system shall be documented by the user or user's representative.

The Electronic Document Management Program's Operational Requirements Document was prepared and approved as required; however, it did not completely address all users' site and workload requirements for Increment 1. The document was limited in that it mainly addressed the requirements of the Omaha, Nebraska operating location rather than all sites for Increment I. This occurred because Program Office personnel stated that the Under Secretary of Defense (Comptroller) and the Director, Defense Accounting Service had not determined which sites would receive the System and consequently, how much of the workload would be automated. As a result, some process and software modifications are required to successfully implement the Omaha

solution at other sites. The Program Office conducted a "Gap" Analysis to obtain specific information and needed process and software modifications for the other potential sites.

If site and workload requirements are not fully defined, it is difficult to accurately determine the System's cost effectiveness. As a result, the specific capabilities necessary to field Increment 1 will not be fully known until fielding and workload decisions are made.

Suggested Action. Determine which sites will be fielded, how much of the workload will be automated, and update the cost and test and evaluation plans based on these determinations.

Life-Cycle Cost Estimate.

Issue. Part 3.5.1, Life-Cycle Cost Estimates, states that the life-cycle cost estimates shall be explicitly based on the program objectives, operational requirements, contract specifications for the System, and a life-cycle cost and benefit element structure agreed upon by the Integrated Product Team. The estimate should be comprehensive and identify all elements of cost that would be needed to make a decision on whether or not to proceed with the development, production, and operation of a system. Further, the estimate should be based on an assessment of risks and reflect a realistic appraisal of the level of cost most likely to be realized. The detailed cost information supporting the life-cycle cost estimate is contained in the cost analysis requirements description.

The Electronic Document Management Life-Cycle Cost Estimate was prepared as required; however, some cost assumptions were not based on a realistic appraisal of the level of effort actually expected. As noted during the discussion of the Operational Requirements Document, the number of sites to be fielded and the workload to be automated is not fully defined. Other factors affecting the cost documentation were:

- o the independent component cost analysis was substantially higher than the Program Office's estimate which will require reconciliation of the two to establish a realistic baseline.
- o benefits in the Program Office's estimate exceed those presented in the Quadrennial Defense Review, and
- o funding available is currently not sufficient to successfully accomplish the Program.

Therefore, decisionmakers need these cost issues solved to reduce the risk that they could make an improper decision and so that the System can be monitored against a realistic baseline.

Suggested Action. Provide cost and performance metrics approved by the Program Analysis and Evaluation personnel, limit

fielding to a number of sites necessary to capture feedback data, conduct an in-process review subsequent to the milestone decision, and obtain adequate funding before fielding to additional sites.

Cost Analysis Requirements Description.

Issue. Part 3.5.1, Life-Cycle Cost Estimates, states that the DoD Component sponsoring the acquisition program shall establish, as a basis for the life-cycle cost estimates, a cost analysis requirements description of the salient features of the acquisition program and of the system itself.

Much of the detail and the assumptions supporting the Life-Cycle Cost Estimate were contained in the Cost Analysis Requirements Description. However, as indicated on our review of the Life-Cycle Cost Estimate, the detailed cost information was not complete. As a result, a reliable basis for completing the Life-Cycle Cost Estimate must be accomplished.

Suggested Action. Action taken on the Life-Cycle Cost Estimate should be sufficient for this item.

Acquisition Program Baseline.

Issue. Part 3.2.2.2, Acquisition Program Baseline Content, states that the acquisition program baseline shall contain only the most important cost, schedule, and performance parameters. The most important parameters are those that, if the thresholds are not met, the milestone decision authority would require a reevaluation of alternative concepts or design approaches. The values of the parameters should represent the program as it is expected to be produced or deployed. Therefore, costs shown in the life-cycle cost estimate, supported by the cost analysis requirements description, should not differ from the costs in the Acquisition Program Baseline.

The Electronic Document Management Program's Acquisition Program Baseline needed more specific information in order to establish more useful and supportable Program baselines. In addition, the costs shown in the Life-Cycle Cost Estimate and the Cost Analysis Requirements Description needed to be modified to establish a more realistic baseline since the number of sites to be fielded were significantly less than the Program Office had documented. Although, the Life-Cycle Cost Estimate and the Cost Analysis Requirements Description separated hardware and software costs out by site, the amount of hardware and software was based on an estimated workload and an number of workers. Additionally, the benefits are based on the same estimated workload and average number of workers which may change when there are changes in the number of sites actually deployed and other on-going initiatives. Therefore, there is a risk that the most accurate and measurable Acquisition Program Baseline may not be available for evaluating the System's performance, if specific site data is not obtained.

Suggested Action. Establish a baseline for each site prior to implementation and adjust the total Program baseline accordingly. Also, establish criteria to determine when a baseline is breached prior to implementation.

Test and Evaluation Master Plan.

Issue. Part 3.4.1.1, Test and Evaluation Master Plan, states that a test and evaluation master plan shall be prepared, and approved by the Director, Operational Test and the Director, Evaluation and Test Systems Engineering and Evaluation.

The Test and Evaluation Master Plan was prepared and approved; however, it did not provide assurance that the test and evaluation program was complete. This occurred because the Operational Test and Evaluation and Test Systems Engineering and Evaluation personnel did not become involved with the Program until it was designated an Acquisition Category 1A Program and was undergoing unit acceptance testing.

The Test and Evaluation Master Plan was based on the Operational Requirements Document which contained requirements specific to the Omaha, Nebraska operating location. Therefore, as noted earlier the Operational Requirements Document was supplemented by the Gap Analysis as requested by the testers. If the testers had been involved in the Program's development, they would have recommended that developmental stress testing be accomplished and would have required the initial operational test to be conducted at the operating site with the largest workload. Due to the fact that the Program was entering user acceptance testing, the testers tailored their approach to realistically reflect the status of the Program. Therefore, test personnel stated that:

o stress testing can be conducted subsequent to the milestone decision and before fielding to other sites, and

o reviews of other operational sites can be conducted prior to implementation to determine the extent of follow-on operational testing to mitigate the risk that prior developmental and operational testing was not sufficient for the entire Program.

Suggested Action. Request a review be made by Operational Test and Evaluation personnel prior to implementation of additional sites or changes in size or workflow at existing sites to determine the extent of any necessary follow-on operational testing. Further, request that Test Systems Engineering and Evaluation personnel review stress testing to determine the maximum throughput and the level of growth that the System can handle before it fails.

Appendix E. DFAS Response to Inspector General, DoD, Review of EDM Milestone III Documentation

DEFENSE FINANCE AND ACCOUNTING SERVICE
1931 JEFFERSON DAVIS HIGHWAY
ARLINGTON, VA 22240-5291

AUG 6 1997

MEMORANDUM FOR ACTING DIRECTOR, FINANCE AND ACCOUNTING DIRECTORATE
INSPECTOR GENERAL OF THE DEPARTMENT OF DEFENSE

SUBJECT: Review of the Milestone III Documentation for the Defense Finance and Accounting Service (DFAS) Electronic Document Management (EDM) Program

Thank you for the opportunity to review the points that will be addressed in your draft report on the DFAS EDM Program. Prior to publishing the draft report I want to take the opportunity to discuss my thoughts on some of the points raised.

First, with regard to the documentation, I agree that it does not and probably could never address all of the information needed to make a fully informed Milestone III decision. Additional information has, however, been made available through the myriad of Integrated Product Teams (IPT) established for this program. We have been assured that the IPT process was formed to raise questions in an open forum and avoid the time consuming/cumbersome formal "paperwork drill". Having said this, however, be assured where appropriate we have modified the documentation to provide needed information.

Regarding the Mission Needs Statement, we also agree that there are a number of initiatives underway that could ultimately reduce the volume of vendor pay transactions as well as the number of documents to be managed. However, because the affect of those initiatives could not be calculated with any precision (in fact, many are outside DFAS control), we have adopted a deployment strategy that is both cautious and flexible. We have requested approval to proceed with the deployment of only five EDM systems. During the next year we will evaluate the impact of vendor pay initiatives and assess whether additional systems are needed. If we do believe that additional systems are needed we will present this to the MAISRC separately.

You are correct, the EDM Operational Requirements Document was prepared on the basis of DFAS-Denver work environment. We fully acknowledge the need to make some modifications to the system to reflect the differing environments of our Centers. The goal was to build a common core system, i.e., scanning, faxing, archiving, etc., and permit only minimal essential modification to the index structure/work flow. Many of the modifications emanate from vendor pay system specific requirements and therefore are not location driven. We have identified the vendor pay systems that will be supported by EDM and have completed the "GAP" analysis to determine required modifications. Our findings are that minimal changes will be needed to EDM.

The independent component cost analysis was initially higher than the Program Office's estimate, however, many of the differences have been reconciled and it is my understanding that CEAC is modifying their report to address the changes. We will continue with this reconciliation until we are confident that we have a solid baseline to measure both cost and benefits.

We agree that stress testing is essential to determine maximum throughput and the level of growth that the system can handle. Unfortunately, we were only able to simulate a stress test in a lab environment prior to deploying EDM in Omaha. We believe we will be able to create a capability to further expand the test to simulate nearly 500 users.

Again, thank you for the opportunity to review your findings. Please be assured that we have already taken steps to incorporate your recommendations into the EDM program.

Teresa K. Walker
Deputy Director for
Plans and Management

Appendix F. MAISRC Decision Memorandum

OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE
6000 DEFENSE PENTAGON
WASHINGTON, DC 20301-6000

COMMAND, CONTROL, COMMUNICATIONS, AND INTELLIGENCE

16 DEC 1997

MEMORANDUM FOR DIRECTOR, DEFENSE FINANCE AND ACCOUNTING SERVICE

SUBJECT: Acquisition Decision Memorandum for Electronic Data Management (EDM) Program

Office of the Assistant Secretary of Defense (C3I) memorandum of August 1, 1997, granted interim authority for the Defense Finance and Accounting Service (DFAS) to obligate funds regarding EDM. It also provided acquisition guidance in a draft Acquisition Decision Memorandum (ADM) but withheld Milestone III approval until DFAS resolved issues regarding program cost and funding. DFAS has satisfactorily resolved those issues.

Based on DFAS resolution of cost and funding issues and various Working-Level Integrated Product Team reviews of EDM, the attached ADM grants Milestone III approval to field EDM Increment 1 to up to five sites. It also grants approval to continue developing Increment 2 and to begin development of Increment 3.

Margaret E. Myers
Acting, MAISRC Chair

Attachment

cc:
MAISRC Members

ELECTRONIC DOCUMENT MANAGEMENT (EDM)
AUTOMATED INFORMATION SYSTEM PROGRAM
MILESTONE II/III
ACQUISITION DECISION MEMORANDUM

Based on the documentation developed by the EDM Program Office, successful Initial Operational Test and Evaluation, and numerous Working-Level Integrated Product Team (WIPT) meetings, the Major Automated Information System Review Council (MAISRC) grants the Defense Finance and Accounting Service (DFAS) the following approvals:

- Milestone III approval to field EDM Increment 1 (Vendor Pay) to up to five sites. For each site following Omaha, the Performance Measurement WIPT will agree to a performance baseline before site activation.

- Approval to continue developing Increment 2 (Contract Pay) and to begin development of Increment 3 (Payroll Services).

The MAISRC also directs the following:

1. Before seeking MAISRC approval to field Increment 1 beyond the first five sites, the PM shall submit, for Milestone Decision Authority (MDA) approval, an updated Acquisition Program Baseline (APB) reflecting the number of, and estimated cost of, the additional Increment 1 sites. If estimated costs in the updated APB exceed the approved APB by more the 10%, the PM shall work with the Cost WIPT to determine whether an updated Economic Analysis is required.

2. Follow-on test and evaluation (FOT&E) shall be conducted to evaluate the additional Increment 1 changes identified in the EDM Gap Analysis; to verify interoperability with CAPS, STAR-FL and SAMMS; and to assess system performance if the number of users at a particular site are significantly larger than the Omaha Operating Location (OPLOC).

   - Before conducting FOT&E, a stress test shall be completed and the results documented in the DT Report certifying readiness to proceed to FOT&E. The DT Report must be provided to the Director, Test Systems Engineering and Evaluation before the Operational Test Readiness Review for the FOT&E.

   - The PM shall send a copy of the FOT&E Independent Evaluation Reports to the Overarching IPT (OIPT) Leader.

3. The PM shall continue working with the Security WIPT to ensure completion of the EDM security accreditation, to ensure the review of all EDM security measures by the Defense Information Systems Agency (DISA) and the Information Assurance Directorate (OASD(C3I)), and to ensure that proper security test and evaluation is accomplished for Increments 2 and 3.

4. Within 90 days of this ADM, the PM shall provide the OIPT Leader a certification that the EDM system is Year 2000 compliant, or a status report describing when Year 2000 compliance will be achieved.

5. The PM shall continue to work with the performance measurement WIPT to establish and implement a plan for measuring the improved mission capabilities resulting from the deployment of EDM and to develop any necessary changes to the APB.

6. The PM shall continue to work with DISA to ensure compliance with Defense Information Infrastructure Common Operating Environment (DII/COE) and Joint Technical Architecture requirements, and to ensure that the information regarding EDM in the Defense Integration Support Tool is current.

7. At least 60 days before seeking MAISRC Milestone III approval for Increments 2 and 3, the PM shall:

   - Submit to the Deputy Director, Space & Strategic Programs (ODPA&E) an updated Economic Analysis (EA) and a Component Cost Analysis of the EA. These documents shall be prepared in coordination with the Cost WIPT.

   - Provide to the OIPT Leader an Operational Requirements Document and evidence of OUSD(Comptroller) revalidation of the EDM Mission Need Statement.

8. At least 90 days before seeking MAISRC Milestone III approval for Increments 2 and 3, the PM shall submit for OSD approval an updated TEMP addressing Increments 2 and 3.

16 DEC 1997

Margaret E. Myers
Acting, MAISRC Chair

Date

Appendix G. Report Distribution

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House Subcommittee on Government Management, Information, and Technology, Committee on Government Reform and Oversight
House Subcommittee on National Security, International Affairs, and Criminal Justice, Committee on Government Reform and Oversight
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